University of Tehran
School of Electrical and Computer Engineering

Course:	**8101619 – Internet Engineering**
Course type:	EE*: Com ☐ E ☐ P ☐ B ☐ Con ☐ D ☐ — CE*: SW ☒ HW ☐ IT ☐ — Credit: 3 Elective: EE* ☐ ☐ ☐ ☐ ☐ ☐ — CE* ☐ ☐ ☐
Level:	Undergraduate ■ Graduate ☐
Co-requisite(s):	Database Design (8101459)
Prerequisite(s):	Computer Networks (8101412)
Prerequisite by topic:	Object-oriented programming and fundamentals of computer networks
Textbook(s):	[1] M. Fowler, *Patterns of Enterprise Application Architecture.* Addison-Wesley, 2003. [2] D.C. Ashmore, *The Java EE Architect's Handbook.* 2nd ed., DVT Press, 2014. [3] M. Harwood, M. Goncalves, and M. Pemble, *Security Strategies in Web Applications and Social Networking.* Jones & Bartlett Learning, 2010.
Coordinator:	Khosravi , Professor, School of ECE
Goals:	The goal of this course is to cover the basic techniques in developing Web-based and Internet-based programs. Also, important points in architectural design of a system on an Internet scale are examined. In addition, creating Web services, Web 2 concepts and semantic web, social networks and cloud computing on the Web will also be the subject of this lesson. Another aspect of this lesson is the provision of web softwares' quality requirements such as performance, scalability, portability, security and usability.
Outcome:	Students who successfully complete this lesson will be able to: 1. Develop web-based softwares 2. Respond to architectural challenges in creating Internet-scale applications 3. Use the web as a platform for the development of applications 4. Apply technology frameworks to meet the quality needs of web applications
Topics:	1) An Introduction to Web- HTTP protocol - Web page design 2) Create simple web applications (based on Servlet, PHP or .NET) 3) 3-tier architectural pattern 4) Connection to Databases - Mapping Objects to Relations 5) Domain logic organization 6) Frameworks and layout patterns on the web

	7) Manage Sessions 8) Concurrency control on web systems 9) Distributed web systems 10) Clustering and cloud computing 11) Web application's security 12) Create Authenticated Web Sites 13) Performance of Web-based systems 14) Web services 15) Semantic web, social networks 16) User interface design on the web 17) Mobile programming on the web
Computer usage:	Proper Web programming languages and frameworks (based on the technology chosen by the coordinator)
Assignments:	8 assignments
Projects:	A project to deploy taught lessons
Grading:	Assignments: 20% Projects: 10% Midterm exams: 35% Final exam: 35 %
Further readings:	
Prepared by:	
Date:	

*EE: Electrical Engineering		CE: Computer Engineering	
Com	Communications	SW	Software
E	Electronics	HW	Hardware
P	Power	IT	Information Technology
B	Bioelectronics		
Con	Control		
D	Digital System		